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April 18, 2013

VIA FEDERAL EXPRESS

Frank C. Brock
U.S. Environmental Protection Agency
USEPA Region 2
290 Broadway
New York, NY 10007-1866

Re: *Finger Lakes LPG Storage, LLC*
Finger Lakes UIC Permit Application - List of Outstanding Items

Dear Frank:

As you know, we represent Finger Lakes LPG Storage, LLC (Finger Lakes) in relation to its proposed LPG Storage Facility in the Town of Reading, Schuyler County. In response to your e-mail of March 12, 2013 (which included an attached list of application deficiencies), enclosed are Finger Lakes' responses to EPA's March 12, 2013 Outstanding Questions, Reminders and Information Needs.

Please note that some of the information contained in the response and the attachments to this transmittal contain confidential information or confidential and/or proprietary, trade secret or business information and should be treated as privileged and confidential and should not be released pursuant to the provisions of 40 CFR Part 2. In particular, the response to Items 4, 6, 7, 9 (¶ 2), 11, and the exhibits associated therewith should be held confidential and not disclosed under any Freedom of Information Act requests.

Sincerely,

BOND, SCHOENECK & KING, PLLC

Kevin M. Bernstein

Enclosures

Finger Lakes Responses to USEPA March 12, 2013
Outstanding Questions, Reminders and Information Needs

No.	Item	Deficiency	Response/Comments
1	Well FL-1	Please be advised that, since well FL-1 is proposed to be drilled as, among other things, a brine injection well, Finger Lakes must obtain a UIC permit prior to constructing the well (40 C.F.R. §144.31(a))	Initially, Finger Lakes expects to install FL-1 as a stratigraphic well. When it is used as an injection well, Finger Lakes will expect to have its UIC permit.
2	Gallery 10 Pressure Test	Awaiting test results. Also awaiting plan as to whether any Gallery 10 wells will be utilized for pressure monitoring Gallery 10 for communication with proposed Finger Lakes Gallery 1.	Well 18 will be plugged and abandoned. Well 52 will be used for monitoring and a digital pressure recorder will be placed on this well for this purpose. Well 57 may also be used for monitoring, but a final decision has not yet been made. The pressure test will be performed within the next two (2) weeks and the results will be provided.
3	Wells to be Permitted, volume of LPG to be stored	1. Original permit application sought permit for Wells 33, 34, 43, 44, FL-1 and 58. Believe that current plans are to utilize only FL-1 and 58 for brine/LPG injection. If so, please formally advise EPA of this application modification. Note that Well FL-2 does not need to be covered by any EPA UIC permit that may be issued for this project, if that well will not be used for brine injection. However, since this well is within the area of review and will be affected by the injection activity, EPA must receive construction information, well logs and any other information	1. The current plan is to plug and abandon wells 33, 34, 43 and 44 and utilize FL-1 to access the cavern. FL-2 will be drilled but only be used as a monitoring well. Finger Lakes will provide all completion and well log information to EPA for both FL-1 and FL-2, even if both are initially drilled as stratigraphic wells.

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		on this well when it is drilled. 2. With the presumed use of only FL-1 in proposed Cavern #1, will the volume of LPG for which Finger Lakes' seeks approval to be stored, and therefore the volumes of brine to be injected into proposed Cavern #1 still 1.5 million barrels? 3. Please advise EPA at least 30 days in advance of initiation of any plugging activities on Wells 33, 34, 43 and 44.	2. The requested authorization for Cavern #1 has not changed – 1.5 million barrels. 3. Finger Lakes will communicate to EPA its schedule for plugging these wells in the time requested.
4	Proposed storage pressure gradients	The May 2010 Reservoir Suitability Report proposed differing minimum and maximum storage pressure gradients for Wells 33, 34, 43, 44 and 58. EPA presumes the proposed gradient for Well 58 remains unchanged. Finger Lakes' July 10, 2012 response indicated that the expected casing seat in FL-1 to be at 2050 feet and max. storage pressure gradient to be 0.62 psi/ft. Also stated that the maximum brine injection pressure would be 600 psig. EPA is confused since, using the gradient of 0.62, the maximum pressure at the casing seat would be about 1270 psi (2050 * 0.62). Using a brine specific gravity of 1.22, a maximum pressure of 1270 psi at the casing seat would equate to a brine string maximum surface pressure of about 190 psig. Conversely, the requested maximum brine surface	Since FL-1 has not yet been drilled, the estimate of .62 was simply based on the maximum gradient indicated for the nearby Gallery 1 wells in the Reservoir Suitability Report. DEC has indicated that the maximum storage gradient for FL-1 will be established at the time of well completion and must be approved by DEC. In no case shall the storage gradient be greater than that assumed [redacted] in Finger Lakes' Finite Element Analysis. In addition, the maximum brine injection pressure of 600 psig was based on EPA's preferred method of performing MITs, but it too will be confirmed at the time of drilling and will be approved by DEC as well.

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		injection pressure of 600 psig would equate to a casing seat pressure of about 1680 psi which, at 2050 feet depth, would be a pressure gradient of 0.82 psi/ft, far above the requested 0.62 psi/ft. Please explain this apparent discrepancy and clarify what maximum brine injection pressure/gradient Finger Lakes is seeking.	
5	Plugging Cost Estimates, Financial Responsibility Demonstration	1. Two different plugging cost estimates were submitted by e-mail dated 10/23/2012. One is based upon 7" casing, the other on 8-5/8" casing. Based upon the existing construction of Well #58 and planned construction of FL-1 (i.e. 9-5/8" long string casing), both estimates underestimate the cost of plugging the Finger Lakes wells. While this is not a big deal should Finger Lakes use financial statements to demonstrate Financial Responsibility, if Finger Lakes elects to use a surety bond, letter of credit, etc. Finger Lakes would first need to submit a third party cost estimate based upon the actual well construction. In addition, the cost estimates include a 50% discount that presumably would not be available to a third party. Therefore, should Finger Lakes elect to use a Letter of Credit, Surety Bond or other financial instrument, the value of the instrument must, at a minimum, equal the full estimated cost of plugging the wells. 2. The recent Chief Financial Officer's letter submitted to EPA indicated that the submittal was intended to cover only the US Salt and	1. Finger Lakes intends on using financial statements to demonstrate financial responsibility, just as has recently been approved for the Savona and US Salt facilities and UIC permits. Indeed, the same financial statement (that of Inergy Midstream, L.P.) would be provided as Inergy Midstream, L.P. is the parent of Finger Lakes LPG Storage, LLC. 2. We will submit this under separate cover.

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		Inergy Savona injection wells. Finger Lakes must provide a financial responsibility mechanism for the two brine/LPG injection wells (FL-1, 58).	
6	Well 29 Brine Flow	Jacoby and Dellwig (1974) reported that when Well 29 was frac'd, brine flow was noted at the surface ½ mile north of the well that they attributed to the frac fluid migrating up a tear fault to the surface, presumably the same tear fault along the west shore of Seneca Lake referenced in the literature. Finger Lakes/U.S.Salt was going to check the files on Well 29 to see if additional information on this event is available. EPA also notes that the January 19, 2012 memo from Leonard Dionisio and John Istvan seems to acknowledge the existence of the "Seneca Lake fault", noting in relevant part "the trace on the surface is not continuous...." The memo also notes (Page 5) that "there are three northeastward trending normal faults with small throws of between 8 and 30 meters, none of which affect the salt properties." No information has been submitted concerning the proximity of these faults to the proposed storage site or the Stratigraphic interval that was affected by these faults.	Finger Lakes' geologists (those who prepared the referenced January 19, 2012 memo) have reviewed available information on well 29. All of the data in the file was written by Mr. Jacoby, the author of the subject paper. They [redacted]. The drilling of 29 was completed on June 1, 1958, the well was fractured on June 30, 1958, and the well was solution mined until July 16, 1971. There was [redacted]. Sonar surveys have been performed for well 29 and [redacted]. The most recent sonar and other information about well 29 was provided to EPA on April 11, 2012. The recent sonar shows [redacted]. If [redacted]

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			[redacted] In addition, there were a number of statements in the January 19, 2012 memo which made clear that [redacted] Highlighted sections of this memo illustrate the conclusions of Finger Lakes' geologists in this regard (attached as **Exhibit A**). DEC has recently inquired about a similar subject in connection with the Seneca Lake Storage Facility in the Town of Reading, Schuyler County, NY. Finger Lakes' affiliate, Arlington Storage, has submitted an application to FERC and DEC regarding a small expansion into Gallery 2 of the Seneca Lake Storage Facility (created by wells 30, 31 and 45). Arlington's recent response to DEC's comments noted the [redacted] Arlington has made clear that [redacted]

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			[redacted] When faulted, brittle rocks may or may not become sealed to fluid or gas migration along or across the fault. Crystallization of some minerals such as calcite may seal off movement of formation fluid across faults in brittle formations. [redacted] storage caverns. While there

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			[redacted] There are [redacted] In response to DEC's inquiry, Arlington also addressed Jacoby and Dellwig. Arlington noted: Arlington has created a separate West to East structural cross-section to complement Geophysical Cross-Section B-B'....The West to East cross-

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			section illustrates the structural relationship of all of the formations from the Syracuse salt to the lower part of the Hamilton Shale. The [redacted] The [redacted] was also previously illustrated in Structural Cross-Sections A-A' and B-B'; the [redacted] The surface elevation of Well Nos. 30A and 31A are the same so the drilling depth of the formations for all practical

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			purposes compares them structurally as well as stratigraphically. The Well Nos. 30A-31A Stratigraphic Cross-Section... [redacted] Based on these observations it is clear that there are [redacted] In all cases the [redacted]. A complete copy of Arlington's response, including the referenced structural and geophysical cross-sections, is provided as **Exhibit B**.
7	MIT Methodology	The e-mail dated October 23, 2012 indicates that Barry Moon is working on a revised MIT procedure for the injection wells.	The draft MIT procedures for the wells to be plugged and abandoned, prepared by PB ESS, are attached as **Exhibit C**. We are still in discussions with DEC [redacted] A similar procedure would be used on injection wells FL1 and 58.
8	Subsidence	Which Gallery 10 well(s) will be included in subsidence	Finger Lakes has proposed to DEC that it

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	Monitoring Program/Gallery 10	monitoring program?	would monitor for the bi-annual subsidence survey wells 33, 34, 43, 44 and FL1 as well as 58 and include monuments monitored by US Salt at Mon 20/02, Mon 20/42, BM 77-1, BM 77-2, BM 77-3 and BM USGS95. We have not proposed that we would use any of the Gallery 10 wells as monuments or monitoring points. The attached map (**Exhibit D**) and table (**Exhibit E**) show the monument locations.
9	Attachment P – Monitoring Wells, Subsidence Monitoring	1. In EPA's letter of March 12, 2012, EPA requested a map showing the locations of existing monitoring/observation wells. The Class III permit application indicates that there were 5 observation wells drilled at facility, 3 of which are used as monitoring wells. Are any of the existing wells situated so as to be useful for monitoring ground water quality near the proposed storage caverns? 2. EPA also noted in its application deficiency letter of March 12, 2012 that the Feasibility Study modeled subsidence over the storage caverns for the period 1980-2060. EPA requested a comparison between the subsidence predicted by the model for the period 1980-present versus	1. US Salt monitors two (2) wells and quarterly reports are submitted to EPA. We would propose submitting these results for Finger Lakes as well. Finger Lakes will also be monitoring groundwater quality around the brine ponds, including the brine pond on the US Salt property which Finger Lakes has proposed to construct. See the Engineering Drawing for the Finger Lakes East Brine Pond (Drawing P4) which is attached as **Exhibit F** which shows monitoring well locations. If desired, Finger Lakes can submit these results to EPA as well. 2. If the Finite Element Analysis (FEA) report dated September 2010 is reviewed, pages 24 to 29 (through 2012), where a Salt_Subsid study was

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		the observed subsidence from the surveys.	made for the period in question, the [redacted] Based on a review by Finger Lakes' geologists, [redacted] The regularly scheduled US Salt subsidence survey to be performed this year will be provided to EPA. If necessary, we will then provide a comparison of this survey with the subsidence survey results from Seneca Storage and shown in the FEA model.
10	Attachment O - Plans for Well Failures	EPA's December 6, 2011 application deficiency letter requested well failure plans for at least the following scenarios: a. Roof falls resulting in damage to the brine tubing string and potential release of brine contaminated with LPG from the well as well as possible migration of brine into fractures in the confining zone created by cavern roof instability. b. Subsidence monitoring indicates that the area in	a. In order to prevent LPG or brine from escaping if the brine displacement tubing becomes broken during storage operations, an emergency shut off valve will be activated at the wellheads of each well in a closed shut-in

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		the vicinity of one or more of the storage caverns is subsiding, indicating potential collapse of the cavern roof as well as possible associated fracturing of the confining zone. c. In addition, what are the plans should monitoring well FL-2 and/or monitoring of Gallery 10 indicate unexpected fluid movement due to storage activities?	condition. b. In reviewing the several subsidence monitoring surveys, we do not perceive the EPA conclusion of any ongoing subsidence that might jeopardize the storage related to any of the subject wells/caverns. c. If there is any indication of unexpected fluid movement due to storage activities in any of the caverns, the wells will immediately be shut-in to protect the environment.
11	Well 58 Solutioning	EPA's letter of March 12, 2012 requested information concerning any pad that may have been used to protect the roof of the Well 58 cavern during the solutioning activity in 2010-2011. This information was not provided.	[redacted] However, [redacted]. Well 58 was recently resonared. The results will be provided to DEC and EPA shortly.

List of Exhibits:

Exhibit A	Highlighted Finger Lakes LPG Storage, LLC Memorandum dated January 19, 2012
Exhibit B	Arlington Storage Company, LLC Response to DEC November 6, 2012 Notice of Incomplete Application Dated December 19, 2012
Exhibit C	Draft MIT Procedures
Exhibit D	US Salt Subsidence Survey Monument Map
Exhibit E	US Salt Subsidence Survey Table of Monument Locations
Exhibit F	Engineering Drawing for the Finger Lakes East Brine Pond (Drawing P4)